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The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ
Training Office, Bldg. 911A.*

C-A OPERATIONS PROCEDURES MANUAL

13.8.2 Calibration

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Hand Processed Changes

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Approved: _____
 Signature on File
 Collider-Accelerator Department Chairman Date

D. Passarello

13.8.2 Calibration

1. Purpose

To define a calibration program for the Collider-Accelerator Department (C-A), which supplements the BNL's Standards Based Management System (SBMS) Calibration subject area. This program applies to the calibration and maintenance of Measurement & Test Equipment (M&TE), and associated standards, that are to be used to verify conformance to prescribed high accuracy technical requirements during inspection, testing and research.

2. Responsibilities

- 2.1 M&TE, associated standards, and fixtures or tools, used for inspections; acceptance testing; data collection; process monitoring; maintenance, repair, and calibration of installed facility equipment and instruments, shall be reviewed by the Project Engineer or Liaison Engineer to determine whether calibration is required. In all cases, category A1 or A2 equipment/instruments shall be calibrated as applicable.
- 2.2 Operations, maintenance and engineering personnel, are required to employ calibrated tools, standards, and instruments when specified in the operations, maintenance or ES&H procedures.
- 2.3 Unique research apparatus/equipment intrinsic to an experiment, which is set up and calibrated by researchers, may be addressed through procedures or processes accepted by the appropriate scientific community.

3. Prerequisites

None

4. Precautions

None

5. Procedure

- 5.1 M&TE used for acceptance purposes, or where critical measurements are to be made, shall be labeled such that potential users of the equipment are aware of its calibration status, e.g. "Calibrate Before Each Use", "Do Not Use Out of Calibration", "Calibration Due".
- 5.2 Equipment not used for inspection, acceptance or critical measurements, do not require labels or inclusion in the calibration system. It is at the discretion of the Project Engineer or Liaison Engineer to require that equipment not in the calibration system be identified (e.g. "Not In Calibration System").

- 5.3 The BNL Quality Program and Services Office shall be notified of off-site facilities performing calibrations for C-A.
- 5.4 Calibration procedures which are published standard practices, written instructions that accompany purchased equipment, or instructions established by other BNL divisions or sections should be used whenever possible. When calibrations are performed by an outside source, a procedure need not be maintained by C-A. In such cases a calibration report or certificate is obtained as a basis for record.
- 5.5 Procedures for calibrating special or in-house built equipment, shall be developed by the Project Engineer, Liaison Engineer, or designee. These procedures shall comply with the SBMS Calibration subject area and be approved by the appropriate personnel.
- 5.6 Nonconformance - M&TE and associated standards found to be out of calibration, damaged, improperly maintained or calibrated, shall be identified as nonconforming and removed from use. The responsible individual shall ensure that the nonconforming equipment is not used until such time as an investigation, per the SBMS Nonconformance and Corrective and Preventive Action Subject Area, is performed.

6. Documentation

- 6.1 Records shall be maintained for M&TE that require calibration to show that established schedules and procedures have been followed. Records shall comply, as appropriate, with the SBMS Calibration Subject Area.
- 6.2 Calibration records, and nonconformance reports shall be maintained for a minimum of three (3) years, unless otherwise specified, in order to furnish objective evidence of calibrations and maintenance to all M&TE Standards.

7. References

- 7.1 [SBMS, Calibration](#)
- 7.2 [SBMS, Nonconformance and Corrective and Preventive Action](#)

8. Attachments

None